The NEW NFPA 1850-2026 Edition

Agenda

- Purpose
- PPE Manager/Technician
- Breakdown of Maintenance of Gear & Responsibilities
- Verified Cleaning (ISP)
- Final tips & takeaways

Purpose of NFPA 1850 - 2026

- To help the fire industry reduce the safety risk and potential health risks associated with poorly maintained, contaminated, or damaged protective ensembles SCBA.
- Basic criteria to help fire departments on the selection, inspection, decontamination, repair, storage, and retirement of structural firefighting and proximity firefighting protective ensembles or ensemble elements.
- Verification procedures for Verified Independent Service Providers (ISPs), manufacturers, and organizations for the inspection, cleaning, and repair of structural firefighting and proximity firefighting protective garments.
- Provide guidelines for all detergents or alternative machines for sanitizing and cleaning protective garments.

PPE Manager

- Maintaining and understanding the current NFPA standards (ie. 1970) and other laws for the purchase of appropriate gear.
- Complete risk assessments for the type of PPC required.
- Establishing policy and procedures for the proper use and care of PPC
- Establishing a system to monitor, track, and document PPC thru life
- Determining the useful life of PPC
- Establishing criteria for assessing PPC selection.
- Actively participate in the selection of the departments PPC
- Establishing a process in the selection of the department's PPC
- Register for training course to ensure both roles are understood and individuals are certified to professional qualifications.
- Establishing processes for returning product that does not meet specifications.
- Following retirement and disposal criteria of PPC
- Establishing procedures for the inspection, cleaning, and repair of PPC.
- Establishing a process for fitting of gear for firefighters.
- Developing a training program specific for the job functions of a PPC Technician and department.
- Create a budget for acquisition and maintenance.
- Create procedures for handling contaminated PPC
- Primary point of contact with manufacturer and verified ISP.

PPE Technician

- can be the same person as PPE Manager
- tasks of PPE Tech, can also be done by your verified ISP

- Receives specialized training.
- Ensures all PPC is in proper working condition, compliant with 1850.
- Examining and filing information on PPC
- Establishing a schedule for cleaning, inspection, and repair of PPC
- Determining the need for repair or extra cleaning.
- Performing an inspection on all ensemble elements.
- Coordinating all repairs.
- Documents actions taken on the PPC in the tracking system.
- Evaluates processes on-going, reports any concerns to PPC Manager.

Responsibilities for Garment Element Inspection, Cleaning, and Repair

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Table 4.3.4 Responsibilities for Garment Element Inspection, Cleaning, and Repair

	Manufacturer Verified in Cleaning	Verified ISP or Verified Organization	Verified Cleaner	Manufacturer-Trained Organization	User	Ensemble or Ensemble Element Manufacturer
Routine inspections (Section 6.2)					X	
Preliminary exposure reduction (Section 7.2)					X	
Advanced inspection (Section 6.3)	X	X		X		X
Complete liner inspection (Section 6.4)	X	X		X		X
Advanced cleaning (Section 7.3)	X	X	X	X		
Sanitization or disinfection (Section 7.4)	X	X	X	X		
Specialized cleaning (Section 7.5)	X	X	X	X		
Repair management						
Basic repair (Sections 8.2 and 8.3)	X	X		X		X

Programs & Education

4.3.2*

The organization shall develop written standard operating procedures (SOPs) that shall identify and define the various parts of the program and the various roles and responsibilities of the organization and of the members in the program parts specified in **Table 4.3.2**.

Table 4.3.2 Required Program Parts for Structural and Proximity Firefighting Protective Ensembles and Elements

Program Part	Chapter/Section of this standard
Records	Section 4.4
Protecting the public and personnel from exposure to contaminated PPE	Section 4.6
Selection	Chapter 5
Inspection	Chapter 6
Cleaning	Chapter 7
Repair	Chapter 8
Storage	Chapter 9
Retirement, disposition, and special incident procedures	Chapter 10

4.3.4.3.2 (2)
Education of the organization’s members on the basics of PPE components, use, limitations, routine inspection, and preliminary exposure reduction

Records

4.4.3*

At least the following records shall be kept for each protective ensemble or ensemble element:

(1) Person to whom element is issued

(2) Date and condition when issued

(3) Manufacturer and model name or design

(4) Manufacturer's identification number, lot number, or serial number

(5) Month and year of manufacture

(6) Date(s) and findings of advanced inspection(s)

(7) Date(s) and findings of advanced cleaning, disinfection or sanitization, or specialized cleaning

(8) Reason(s) for and entity that performed advanced cleaning, disinfection or sanitization, or specialized cleaning, including the incident number and the extent of exposure if known

(9) Date(s) of repair(s), entity that performed repair(s), and brief description of repair(s)

(10) Date of retirement

(11) Date and method of disposal

Protect Public

Organization needs to put an SOP in place to decide when to wear the following elements when handling contaminated gear:

- Gloves
- Aprons
- Coveralls
- Medical mask
- Eye of face protection
- N95
- Higher filtering facepiece

4.6.1

The organization shall develop written SOPs that minimize the public's and the fire department personnel's exposure to soiled or contaminated structural or proximity firefighting protective ensembles and ensemble elements.

Selection

5.1.2

The risk assessment shall include, but not be limited to, the hazards that can be encountered by structural or proximity firefighters based on the following *(as referenced in Annex **C**)*:

(1)* Type of duties performed

(2) Distinguishing response activities for different potential incidents

(3) Organization's experiences

(4) Incident operations

(5) Geographic location and climate

(6)* Specific physical area of operation

(7)* Likelihood of or response to CBRN terrorism incident

(8)* Need for two sets of ensemble elements or spare ensemble elements

5.1.1*

Prior to starting the selection process of structural firefighting ensembles and ensemble elements and proximity firefighting ensembles and ensemble elements, the organization shall perform a risk assessment.

Cleaning

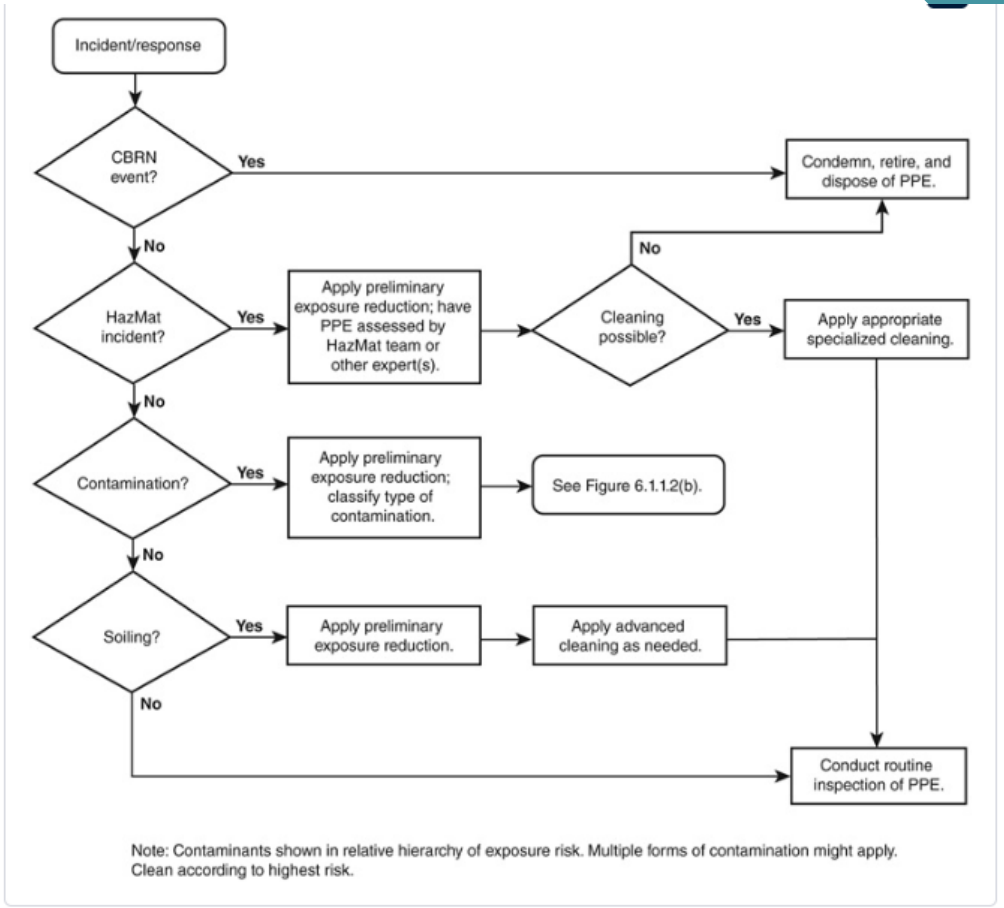
3.3.13* Cleaning.

The act of removing soiling and contamination from ensembles and ensemble elements by mechanical, chemical, thermal, or combined processes.

> **3.3.13.1* Advanced Cleaning.**
>
> The act of removing both soiling and contamination generally associated with products of combustion that arise from fireground or other emergency scene exposures.
>
> **3.3.13.2* Specialized Cleaning.**
>
> The act of removing hazardous materials, soiling associated with body fluids, or other forms of contamination that require special attention or handling either due to the hazards impose by these substances or the need for unique techniques for their removal.

3.3.14* Cleaning Facility.

An entity, location, or site engaged in the cleaning of ensemble elements that includes an elemer manufacturer verified in cleaning, a verified cleaner, a verified organization, or a verified ISP.



Note: Contaminants shown in relative hierarchy of exposure risk. Multiple forms of contamination might apply. Clean according to highest risk.

Cleaning

- Washer/extractor needs to be programmable for detergent adjustment, temperature control, water level, cycle type, and time.
- G-force shall not exceed 100G (needs drum revolutions adjustment)
- No top-loading machines to be used.
- Mild detergent must be within pH levels of 6.0 to 9.5, undiluted

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- Ensembles should be dried by air, cabinet, or a no-heat dryer.
- Ensembles should be advanced cleaned once every 6 months, with 1 being during the advanced inspection.
- Consider advanced cleaning before putting new gear into service.

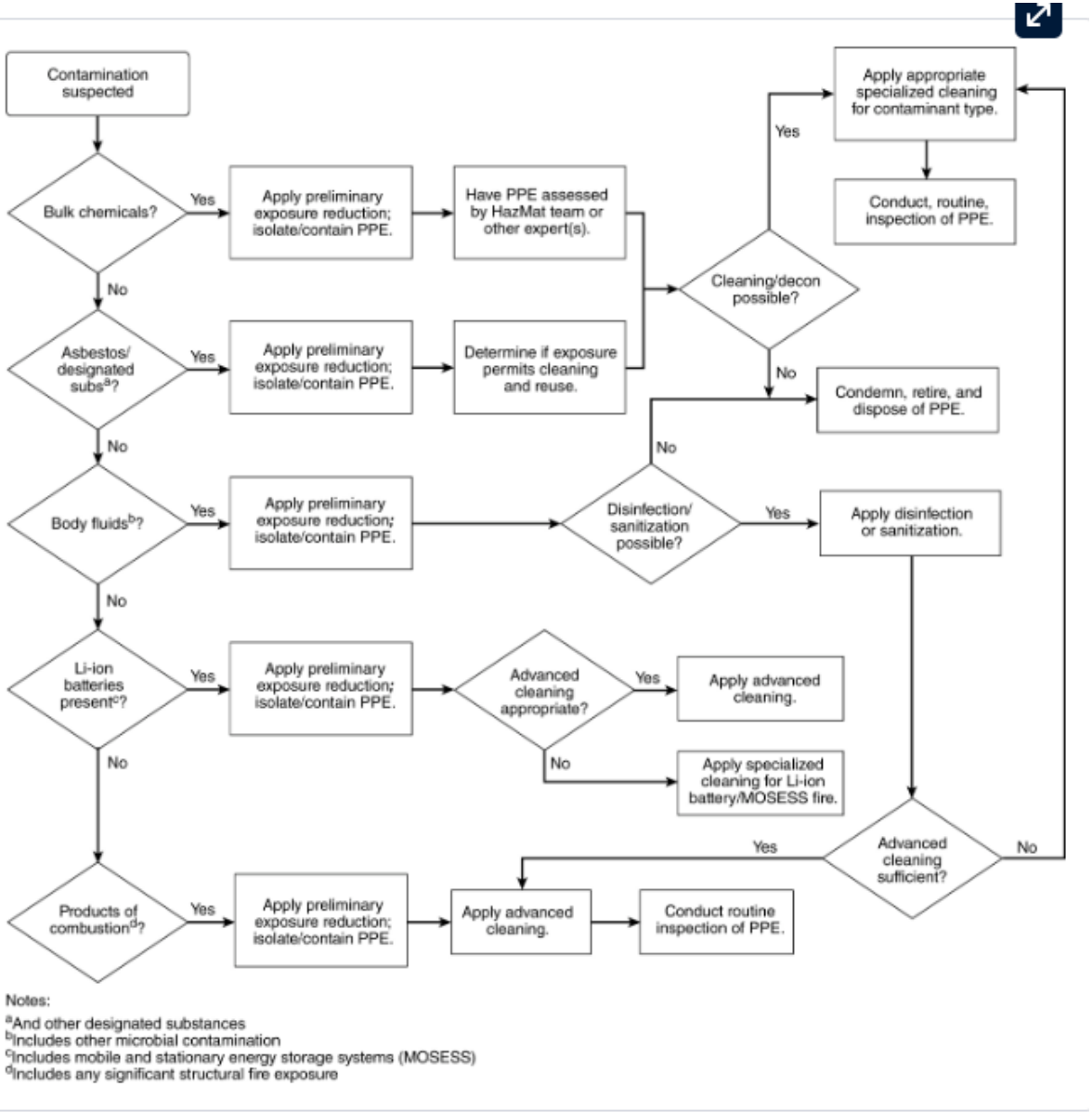

Figure 6.1.1.2(b) Approach for Addressing Specific Types of Contamination.

Decision Tree for Specific Contaminants

Preliminary Exposure Reduction PER

- Remain on SCBA airflow.
- Complete dry, wet, or combo mitigation.
- Dry – brushing debris with soft bristle
- Wet – gentle rinse of exterior with optional detergent to be used.
- Remove gear, isolate in bag, return to station for cleaning.
- Also for hood, eye, and face pieces.

6.2.1.1*

Organizations shall include preliminary exposure reduction as part of their overall program for the care and maintenance of structural firefighting ensembles and ensemble elements and proximity firefighting ensembles and ensemble elements.

Testing & Inspection

- SOP in place for Inspection
- Routine Inspection – Firefighter
- Advanced Inspection – PPC Mgr, PPC Tech, element manufacturer, man-trained org, ver-org, Verified ISP.
- All components – ensemble, hood, gloves, boots, helmet.
- Complete liner inspection – annually.

Routine Inspection

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Table A.7.2.2 Routine Inspection Criteria

Criteria	Coats and Trousers	Hoods/Shrouds	Helmets	Gloves	Footwear	DRD
Soiling	X	X	X	X	X	X
Contamination	X	X	X	X	X	X
Rips, tears, abrasions, and cuts	X	X	X	X	X	X
Damaged or missing hardware and closure systems	X					
Charring, burn holes, melting	X	X	X	X	X	X
Shrinkage	X	X	X	X	X	
Material discoloration and degradation	X	X	X	X	X	X
Visibility marking integrity attachment to garment: reflectivity damage	X		X	X	X	
Loss of face opening elasticity or adjustability		X				
Cracks, dents, abrasions			X	X		
Bubbling, soft spots, warping			X			
Damaged or missing components of suspension or retention systems			X			
Damaged or missing components of faceshield/goggle system, including discoloration and scratched lenses			X			
Inverted glove liner				X		
Exposed or deformed steel toe, steel midsole, or shank					X	
Loss of water resistance					X	
Closure system component damage and functionality					X	
Earflaps: rips, tears, or cuts; thermal damage such as charring, burn holes, or melting			X			
Correct assembly and size compatibility of shell, liner, and DRD	X					X
Delamination as evidenced by separation or peeling of outer shell (aluminized materials)	X	X	X	X	X	
Any damage to the particulate blocking layer (particulate-blocking hoods only)		X				

Advanced Inspection

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Table A.7.3.5 Advanced Inspection Criteria

Criteria	Coats and Trousers	Hoods/Shrouds	Helmets	Gloves	Footwear	DRD
Soiling	X	X	X	X	X	X
Contamination	X	X	X	X	X	X
Rips, tears, cuts, and abrasion	X	X	X	X	X	X
Damaged or missing hardware or closure system	X	X	X	X	X	
Charring, burn holes, melting	X	X	X	X	X	X
Shrinkage				X		
Material degradation (UV or chemical damage)	X	X	X	X	X	X
Material discoloration	X	X	X	X	X	X
Visibility marking integrity, attachment to garment, reflectivity damage	X		X	X	X	
Loss of face opening elasticity or adjustability		X				
Any damage to the particulate blocking layer (particulate blocking hoods only)		X				
Cracks, dents, abrasions			X		X	
Bubbling, soft spots, warping			X		X	
Damaged or missing components of the suspension and retention systems			X			
Earflaps: rips, tears or cuts, thermal damage (such as charring, burn holes, melting, or discoloration of any layer)			X			
Damaged or missing components of faceshield/goggle system, including discoloration and scratched lenses			X			
Inverted glove liner				X		
Exposed or deformed steel toe, steel midsole, or shank					X	
Loss of water resistance				X	X	
Evaluation of system fit and coat/trouser overlap	X					
Loss of seam integrity	X			X		X
Broken or missing stitches	X	X		X		X
Loss or shifting of liner material	X			X		
Loss of wristlet elasticity, stretching, runs, cuts, or holes	X			X		
Label integrity and legibility	X	X	X	X	X	X
Hook and loop functionality	X		X		X	X
Liner attachment system	X					X
Material elasticity, stretching out of shape		X				
Damage to the impact cap			X			
Loss of flexibility			X			
Punctures, cracking, or splitting		X			X	X
Excessive tread wear					X	
Condition of lining: tears, excessive wear, separation from outer layer					X	
Correct assembly and size compatibility of shell, liner, and DRD	X					X
Closure system functionality	X					
Accessories for compliance with 4.3.3	X		X			
Complete liner inspection (Section 6.4)	X					
Delamination as evidenced by separation or peeling of the outer shell (aluminized materials)	X	X	X	X	X	

Repair

8.1.1

All repairs shall be managed by the PPC manager and performed by the original manufacturer, a verified ISP, or a member of the organization who has received training.

8.1.4*

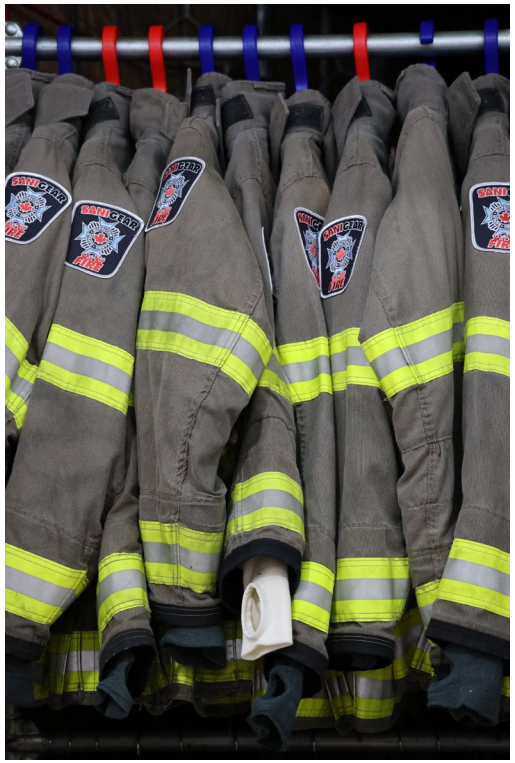
All repairs and alterations to the ensemble or ensemble element shall be done in a manner and using like materials and components that are compliant with NFPA 1970 (1971).

8.2.1

All repairs and alterations shall be performed in the same manner and using like materials as the garment element manufacturer, including, but not limited to, fabric, thread type, seam construction, hardware, and hardware backing, unless approved by the garment element manufacturer.

Storage

- Store away from UV rays, including fluorescent lighting, direct sunlight, and indirect sunlight.
- Ensure PPE is fully dry before storing.
- Do not store in airtight containers, unless they are new and unissued.
- Store in temperatures between -32° C – 82° C.
- Keep sharp tools away from stored gear.
- Hang to store to limit crease damage.



- Storage area shall be clean, dry, and well ventilated.

Retirement, Disposition

10.1.1*

The organization shall develop specific criteria for removal of structural firefighting ensembles and ensemble elements and proximity firefighting ensembles and ensemble elements from service.

10.2.1

Retired structural firefighting ensembles and ensemble elements and proximity firefighting ensembles and ensemble elements shall be destroyed or disposed of in a manner ensuring that they will not be used in any firefighting or emergency activities, including live fire training.

10.2.2

Retired structural firefighting ensembles and ensemble elements and proximity firefighting ensembles and ensemble elements determined to be no longer of use in accordance with **10.1.8** shall be permitted to be used as follows:

(1) For training that does not involve live fire, provided the ensembles and ensemble elements are appropriately marked as being for non-live-fire training only

(2) As determined by the organization

- Removal process
- Retire for no live fire events/training
- Training allowed – well marked!

Why use an verified ISP?

- Tested and Spot Checked for processes
- Aid in helping to complete PPE Technician components.
- Complete SAM – scheduled advanced maintenance visits with Rental suits.
- Remove the guess work.
- Verified ISP can help build frameword.
- Reporting system available to FD.

Verified Cleaning at ISP

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Table 11.1.1.1 ISP and Organization Verification Designation Criteria

Function/Capability	Verified ISP or Verified Organization	Verified Cleaner
Advanced cleaning	Required	Required
Heavy metals cleaning efficiency	≥50% for average of all metals	≥50% for average of all metals
Semivolatile organic compound cleaning efficiency	≥50% for average of all compounds	≥50% for average of all compounds
Biological sanitization effectiveness — *Staphylococcus aureus*	3 log reduction or better	3 log reduction or better
Biological sanitization effectiveness — *Klebsiella pneumoniae*	3 log reduction or better	3 log reduction or better
Advanced inspection	All ensembles and ensemble elements of structural and proximity firefighter protective clothing	Not allowed
Advanced repair	At a minimum for verification of advanced repairs, repair of outer shells and thermal barriers is required	No repairs allowed
Advanced repairs for moisture barriers	ISPs have a choice of which moisture barriers to verify	Not allowed

ISP Check Points

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Table 11.2.12 Follow-Up Program Schedule

Time Since Previous Verification Testing	Verification Task	Method of Verification
6 months	Quality review and inspection	On-site visit or virtual inspection
12 months	Quality review and inspection	On-site visit
18 months	Quality review and inspection	On-site visit or virtual inspection
24 months	Verification testing	On-site visit with additional virtual inspections, as needed

After Fire Shower Protocol

- Good – Rinse body with water
- Better – Shower with soap & water
- Best – Shower with AC&BC
    - Activated Charcoal & Bentonite Clay

Key Take-Aways

- Maintenance of gear
- PPC Manager
- PER
- Decon your body, as you decon PPE

Thank you

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